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a second frequency converter for converting said radio communication signals between base-band signals and an intermediate frequency signal; and

a base-band signal processing circuit for handling a conversion between said base-band signals and audio signals,

wherein said second frequency converter includes a second local oscillator for producing a second local oscillator signal,

wherein said first frequency converter includes:

one reception-sided mixer for converting a reception signal within the communication frequency band into another reception signal within the intermediate frequency band,

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Cont one transmission-sided mixer for converting a transmission signal within the intermediate frequency band into another transmission signal within the communication frequency band,

a first local oscillator for commonly supplying a first local oscillator signal to both said reception-sided mixer and said transmission-sided mixer, and

a mixer for using said second local oscillator signal so as to convert a transmission base-band signal into a transmission intermediate frequency signal,

wherein said second local oscillator includes:

a plurality of oscillators having different oscillating frequency from each other, and

a switch for selectively supplying the oscillator outputs of said plural oscillators to said mixer,